

bae urban economics

Comprehensive Plan Update Fiscal Impact Analysis

For the City of Annapolis, Maryland

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Contents

EXECUTIVE SUMMARY	I
INTRODUCTION.....	1
METHODOLOGY	2
FY22 City Budget.....	3
Growth Scenarios	4
FISCAL IMPACT ANALYSIS	8
Growth-Related Revenues	8
Property Tax	8
Income Tax.....	11
Other General Fund Revenues	12
Summary of Growth-related Revenues	13
Growth-Related Expenditures.....	14
Police Expenditures	14
Other General Fund Expenditures	15
Summary of Growth-related Expenditures	16
Net Fiscal Impact	17

EXECUTIVE SUMMARY

BAE Urban Economics was engaged by the City of Annapolis to analyze the fiscal impacts of the growth projected in the city's Comprehensive Plan Update. This fiscal impact analysis estimates the net increased demand for city services based on projections of growth from the Municipal Growth chapter and the FY22 city budget. For most costs and revenues, BAE uses an average approach, estimating the share of variable costs and revenues associated with each member of the service population. In addition, BAE uses a case study approach to estimate police costs as well as property tax and income tax revenues.

Three of the four approaches to growth projections described in the Municipal Growth Chapter of the Plan serve as the basis for the growth scenarios evaluated in the fiscal impact analysis. The approach with the lowest overall household projection by 2040 is based on determining the number of units currently in the development pipeline (i.e., approved for or under construction) and the absorption of residential development potential in areas currently zoned to allow residential development. This approach would yield 738 new households, of which 443 would be single family units (likely townhomes) and 295 multifamily units. This approach should be considered the baseline projection of growth by 2040, as this is the level of growth anticipated through the delivery of units currently under construction, and the market absorbing the remaining capacity of areas currently zoned to allow residential development. The second approach, based on the 20-year historical household growth rate in the city, would yield 1,348 new households, while the third and fastest growth scenario assumes Annapolis maintains its 2020 7.6 percent share of Anne Arundel County households, yielding an additional 1,638 new households by 2040.

Each of the three growth scenarios evaluated in this analysis generate a net positive fiscal result. All revenue and expenditure impacts represent annual impacts at buildout of the Plan in 2040. The growth-related impact on revenues under the three scenarios range from \$3.2 to \$7.0 million, comprised primarily of the impact on property tax revenues, which are projected to increase by between \$2.2 and \$5.0 million. Total growth-related expenditures range from \$3.0 million to \$6.6 million. Major components of the growth-related impact on annual expenditures include Police, Public Works, and Parks costs. The net fiscal impact is therefore positive in each scenario, ranging from \$218,171 to \$484,234. It is important to note that this fiscal surplus does not represent profit; rather, this surplus implies that the city will be able to maintain its level of service to residents and workers, as estimated in dollars using FY22 budget appropriations, despite increased demand for city services from population, jobs, and development growth between 2021 and 2040.

INTRODUCTION

BAE Urban Economics was engaged by the City of Annapolis to analyze the fiscal impacts of the growth projected in the city's Comprehensive Plan Update. Using scenarios of household growth developed by Jakubiak & Associates and presented in the Municipal Growth Chapter of the Comprehensive Plan, as well as BAE's own projections of future employment and demand for nonresidential land uses, BAE evaluated the extent to which growth impacts demand for city services funded through the General Fund. This analysis is informed by discussions held with city officials representing each city department that focused on which aspects of departments' services and budgets would be impacted by growth, and how to appropriately model future impacts. The report includes an overview of the methodology employed in the study, a summary of the growth projection scenarios and resulting future land use demand, and an assessment of the findings from the fiscal impact analysis itself.

Fiscal impact analyses are conducted in a wide range of contexts. A city may conduct a fiscal impact analysis of a proposed development on a given site to serve as one metric to consider when reviewing a project for approval. In project-specific fiscal impact analyses, developers will have typically already submitted detailed planning, engineering, and environmental reports to the city, which serve as the basis for determining fiscal impacts. These details not only help to uncover the impact of the net new residents or workers generated from the proposed project, but also provide clarity on infrastructure impacts the city may bear, if any. A fiscal impact analysis is also often required to accompany a Comprehensive Plan, with some jurisdictions requiring that a Comprehensive Plan generate a net positive fiscal result, while other jurisdictions simply require the analysis as another criteria for evaluation. At the Comprehensive Plan level, fiscal impact analyses typically focus on estimates of net new demand for government services and can include cost estimates of new infrastructure required to accommodate the growth projected in the Plan, such as new roads and schools.

As Annapolis is built out, the city's Comprehensive Plan update projects that new development will be infill development, much of which will be located in the areas zoned for mixed-use development that are currently zoned for nonresidential development only. The proposed updates to the city's land use policy not only recognize that the city is built out, but also are intended to improve walkability and access to open space in different neighborhoods throughout the city, and to promote economic development. The proposed areas zoned for mixed use will likely support residential development in the form of townhomes and condominiums or apartments, as well as new retail and office space. The majority of future development, particularly residential development, is likely to occur in these mixed use zones, again due to the city's exclusively residential zones being built out. New development, therefore, will be served by existing roads, and the Comprehensive Plan does not include any new roads or road widening to serve new growth as part of the plan. Similarly, as noted in the Municipal Growth chapter, the existing Water and Sewer systems have enough capacity to

accommodate the increased demand from the growth projected in the plan. As a result, this fiscal impact analysis focuses on the impacts to the demand for city services, which are expected to vary with growth. This will include the demand for increased maintenance and repair of existing infrastructure, which are funded through the General Fund.

METHODOLOGY

This fiscal impact analysis estimates the net increased demand for city services based on projections of growth from the Municipal Growth chapter and the FY22 city budget. For most costs and revenues, BAE uses an average approach, estimating the share of variable costs and revenues associated with each member of the service population.¹ This average variable revenue or cost is multiplied by the projected increase in the service population. The share of each department's budget that is variable with growth was determined during conversations with city staff. Revenue estimated using the average approach include Licenses and Permits, Fines and Forfeitures, Interest, Rent, Intergovernmental Transfers and Charges for Service. Other than police costs, all growth-related expenditures were projected using the average method. As described in the Growth Scenarios subsection below, average growth-related revenues and costs are applied to three different scenarios of future growth.

BAE uses a case study approach to estimate police costs as well as property tax and income tax revenues. Discussions with the Police Department revealed that it hires new officers based on a standard of 3.2 new officers per 1,000 new residents, and each officer incurs one-time capital costs of new equipment and a new vehicle. These assumptions inform the direct operating and capital costs to the Police Department generated by growth. Estimates of property tax revenue are based on the estimated market value of new development. Similarly, estimates of income tax revenue generated by growth are determined by deriving household incomes of new development based on the cost to afford the new residential development in the plan. Revenues and expenditures calculated using the case study approach are also applied to each of the three growth scenarios.

Critically, a fiscal impact analysis does not account for the economic impacts of the Comprehensive Plan. Most components of the plan are intended to improve the Annapolis economy, whether directly or indirectly. Whether it is through improved environmental and social outcomes or directly through economic development policies, the Comprehensive Plan seeks to make Annapolis a more desirable place to live. The economic impacts of the Comprehensive Plan will ultimately be based on more specific notions of, for example, the

¹ Service population equals the resident population plus half the number of workers to reflect the total demand for government services, including the reduced demand from nonresidents. As of 2021, the service population is:

Population	39,982
Jobs	30,508
Service Population	55,236

kinds of new jobs and incomes that come to Annapolis as a result of the plan, and the impact the plan has on resident's incomes, property values and overall standing. The plan details how the city plans to become more efficient and sustainable, which will also deliver economic benefits. Indeed, there are analyses that model these impacts and are useful to conduct as they would give an indication of future fiscal standing. However, a fiscal impact analysis specifically avoids considering the dynamic impact of the Plan on the economy. Instead, it seeks to determine whether the City can accommodate the plan's projections of new growth at the existing level of service² the government provides without raising taxes or other sources of revenue.

FY22 City Budget

The Annapolis City Budget for FY22 has total expenditures of \$152,696,100, comprised primarily of the \$90,883,700 General Fund, which is also the source of revenue and cost assumptions used in the Fiscal Impact Model. The Fund Structure is summarized in Table 1. The General Fund includes the city's main sources of revenue (i.e., property taxes and income taxes), and is the only fund that is affected by the growth projected in the Comprehensive Plan. 'Other Funds' include funds supported by non-local or fixed revenue sources, like the State and Federal government, that are not impacted by growth. Enterprise Funds,³ which total \$34,807,500 for FY22, are revenue-neutral; all costs are offset by charges for service, which are marginally adjusted on a regular basis by the Enterprise Funds (i.e., Water and Sewer utilities). Large infrastructure costs to utilities generated by growth are considered capital costs that are not included in the Enterprise Fund budget. Accordingly, the utilities and other enterprises do not require new infrastructure to accommodate demand from growth. Finally, Internal Service Funds⁴ include costs the government occurs on its own operations and is funded by transfers (spending) from the City's other funds, primarily the General Fund.

² The city government provides a range of services to residents and workers. The city's budget quantifies these services in dollars, with the budget serving as proxy for demand for municipal services. Therefore, level of service of each city department is its budget appropriation in any given year, representing the services provided by that department to city residents and workers.

³ The Enterprise Funds are used to account for those activities of the City that are financed and operated in a manner similar to private business enterprises where costs and expenses, including depreciation, are recovered principally through user charges. Individual operations that the City has designated as enterprise funds include Water, Sewer, Parking, Transportation, Watershed Restoration, and Refuse funds.

⁴ Internal Services Funds, including Health Insurance, Self-Insurance, Fleet Operations, and Fleet Replacement activities, provide service to the City government, and are paid for primarily through departmental budgets. As a result, increases in operating costs to departmental budgets will account for transfers from those departments to the Internal Service Funds.

Therefore, accounting for the fiscal impact of the city's other fund accounts for increased expenditures in the Internal Service Funds.

Table 1: FY22 Fund Structure

FY 22 Funds	FY 22 Budget
General Fund	\$90,883,700
City Council and Office of the Mayor	\$4,386,500
Human Resources	\$1,016,400
Management Information Technology	\$2,045,000
Finance	\$20,551,700
Planning & Zoning	\$4,589,000
Office of Environmental Policy	\$0
Police Department	\$22,117,300
Fire Department	\$21,670,700
Office of Emergency Management	\$502,800
Public Works	\$8,204,300
Recreation & Parks	\$5,800,000
Other Funds	\$8,438,700
Arts in Public Places	\$67,500
Community Development Block Grant	\$1,094,800
Grants	\$5,737,900
Community Legacy	\$330,000
Forfeiture Asset and Seizure	\$160,000
Sprinkler Assistance Program	\$340,000
Reforestation	\$71,000
PEG (a)	\$170,000
Homeownership Assistance Trust	\$467,500
Enterprise Funds	\$34,807,500
Sewer Fund	\$7,079,700
Water Fund	\$9,730,300
Parking Fund	\$5,963,200
Transportation Fund	\$6,355,600
Watershed Restoration Fund	\$2,229,400
Refuse Fund	\$3,449,300
Internal Service Funds	\$18,566,200
Self Insurance	\$2,852,000
Health Insurance	\$11,973,200
Fleet Operations	\$2,224,000
Fleet Replacement	\$1,517,000
Total, All Funds	\$152,696,100

Note:

(a) PEG refers to the Public, Educational, and Government Fund, which supports the city's public access network.
Sources: City of Annapolis, 2021; BAE, 2021.

Growth Scenarios

The Municipal Growth chapter utilizes four different approaches to estimate future household growth. As discussed in the chapter, one of the four approaches, based on the Baltimore Metropolitan Council's (BMC) Series 16 forecasts from 2016, is outdated, and Annapolis' existing development pipeline alone would deliver more households than projected using

BMC's data. The other three approaches, summarized in Table 2, serve as the basis for the growth scenarios evaluated in the fiscal impact analysis.

Table 2: Projections of Net New Growth, 2040

Growth Scenarios	2040 Households				
	Single Family Units	Multifamily Units	Total		
Pipeline and Infill Capacity (a)	443	295	738		
20-year Trend (b)	809	539	1,348		
Fixed Share of County (c)	983	655	1,638		

Growth Scenarios	2040 Housing Units (d)			Vacant Units (e)	Vacancy Rate
	Single Family Units	Multifamily Units	Total		
Pipeline and Infill Capacity	465	301	766	28	3.7%
20-year Trend	849	550	1,399	51	3.7%
Fixed Share of County	1,032	668	1,700	62	3.7%

Growth Scenarios	2040 Population				
	Single Family Units	Multifamily Units	Total		
Pipeline and Infill Capacity	1,186	622	1,808		
20-year Trend	2,166	1,136	3,302		
Fixed Share of County	2,632	1,380	4,013		

Growth Scenarios	2040 Nonresidential Development (sf)				
	Net New Jobs, 2040 (f)	Retail Demand	Office Demand	Industrial-Flex Demand	Total
Pipeline and Infill Capacity	1,363	192,699	144,509	55,473	392,680
20-year Trend	2,489	351,976	263,953	101,324	717,253
Fixed Share of County	3,025	427,697	320,739	123,122	871,558

Growth Scenarios	Net New Service Population, 2040 (g)	
Pipeline and Infill Capacity	2,489	
20-year Trend	4,547	
Fixed Share of County	5,525	

Notes:

(a) This scenario assumed that growth will be determined by the residential units currently in the development pipeline and the absorption of the remaining existing (i.e., prior to adoption of the comprehensive plan) infill capacity in the city for residential development.

(b) This scenario projects growth based on the historic growth household growth rate in Annapolis from 2000 to 2020.

(c) This scenario assumes that Annapolis will maintain its 2020 share of Anne Arundel County households (7.58 percent), while Anne Arundel County will grow based on 2020 household projections for the county developed by the Maryland Department of Planning.

(d) Housing Unit projections are split between single family and multifamily units based on the distribution of single family and multifamily units in the city's development pipeline as of 2021 (34.8 percent multifamily, and 65.2 percent single family).

(e) The housing unit projections account for vacant units among the net new households, assuming a 2 percent vacancy rate among multifamily units and a 5 percent vacancy rate among single family units.

(f) Jobs are projected by assuming the 2021 jobs-housing ratio of 1.85 will be maintained until 2040. This is applied to each of the four household growth scenarios. The distribution of jobs by land use is based on the distribution of jobs by category

as estimated by 2019 ACS five-year of employment in Annapolis and reported in the Market Study for the Comprehensive Plan Update.

(g) Service population equals the resident population plus half the number of workers to reflect the total demand for government services, including the reduced demand from nonresidents.

Sources: Jakubiak & Associates, 2021; City of Annapolis, 2021; BAE, 2021.

The approach with the lowest overall household projection by 2040 is based on determining the number of units currently in the development pipeline (i.e., approved for or under construction) and the absorption of residential development potential in areas currently zoned to allow residential development. As shown in Table 2, this approach would yield 738 new households of which 443 would be single family units (likely townhomes, based on recent trends) and 295 multifamily units. This approach should be considered the baseline projection of growth by 2040, as this is the level of growth anticipated through the delivery of units currently under construction, and the market absorbing the remaining capacity of areas currently zoned to allow residential development. Correspondingly, growth under this scenario would not be affected by adopting updated land use policies as a result of passing the Comprehensive Plan Update because this approach does not assume any of the proposed mixed-use zones in the plan would deliver new development. The second approach, based on the 20-year historical household growth rate in the city, would yield 1,348 new households, while the third and fastest growth scenario assumes Annapolis maintains its 2020 7.6 percent share of Anne Arundel County households, yielding an additional 1,638 new households by 2040.

The household growth projections are translated into future housing unit demand to account for vacant units, assuming a five percent vacancy rate among the new single family households and a two percent vacancy rate among the multifamily households.⁵ Housing unit projections are split between single family and multifamily units based on the distribution of single family and multifamily units in the development pipeline. The household projections are also translated into a population projection, based on the average household size by unit type. According to five-year ACS estimates, single family units in the city have an average size of 2.98 persons per household, while multifamily units have an average household size of 2.11. Applying these household sizes to the estimate of single family and multifamily housing units under each scenario determines the estimated growth in population, which ranges from 1,808 to 4,013 under the three growth scenarios.

As most expenditures and revenues are calculated using the average approach per member of the service population, the growth scenarios also include a projection of jobs using the city's 2021 jobs-to-housing ratio of 1.85 jobs per resident. Applying this ratio to the household projection under each scenario determines the projection of total jobs. The share of jobs in

⁵ A five percent vacancy rate for single family units and a two percent vacancy rate for multifamily is a standard assumption of a healthy housing market, as this level of vacancy would suggest there are enough units in the market to meet demand from regular housing turnover.

retail, office, and industrial sectors is the basis for determining the share of the new jobs in each category, which is then used to estimate future nonresidential development needs by land use. The estimate of nonresidential development by land use by 2040 assumes that retail development averages 500 square feet per worker, office development averages 250 square feet per worker, and industrial development averages 800 square feet per worker.

FISCAL IMPACT ANALYSIS

This section summarizes the findings from the Fiscal Impact Analysis, including detailed descriptions of assumptions and methodologies. Each of the three growth scenarios evaluated in this analysis generate a net positive fiscal result. All revenue and expenditure impacts represent annual impacts at buildout of the Plan in 2040. That is, in 2040, the city could expect a fiscal impact on the annual budget of the amounts generated in this analysis. All findings are presented in constant 2021 dollars (i.e., not adjusted for inflation).

Growth-Related Revenues

The two primary sources of General Fund revenues are the real property tax and the income tax, both of which are calculated directly based on the growth scenarios described in this report. All other General Fund revenues, including Licenses and Permits, Fines and Forfeitures, Interest, Rent, Intergovernmental Transfers and Charges for Service are calculated using the average method.

Property Tax

Growth-related property tax revenue is the most significant component of the fiscal impact result, accounting for 83 percent of growth-related revenues. Market value assumptions are applied to the development program as established under the growth scenarios. For the new multifamily units, the market value is a function of the city's average monthly rent (\$1,700) documented in the Market Study, the vacancy rate among new multifamily units (2 percent), and an estimate of average annual operating expenses per rental unit that is equal to 35 percent of annual rental income per unit (\$7,140). The total market value of the multifamily rental development includes a market capitalization rate of 5.5 percent, which is based on CBRE reports for the Baltimore Metropolitan Area and is likely conservative compared to the cap rates in the city of Annapolis alone. As shown in Table 3, the market value of the new multifamily rental units under each growth scenario ranges from \$70.4 million to \$156.1 million.

Rents for nonresidential development are also based on average asking rents documented in the Market Study, while cap rates for nonresidential development also come from CBRE estimates for the Baltimore Metropolitan Area. Applying these assumptions to the projections of net new nonresidential development under each growth scenario yields a total market value of between \$122.9 million and \$272.7 million. However, the market value of nonresidential development is actually excluded from the calculation of growth-related property tax revenue. This is a conservative approach stemming from the fact that new nonresidential development will most likely replace existing nonresidential development as it would occur on infill sites. However, which existing nonresidential development would be replaced by new development is unclear, so the assessed value of existing nonresidential development cannot be subtracted from the assessed value of new development for the net increase in assessed value. In order

to avoid overestimating property tax revenues, the assessed value of the new nonresidential development projected under the plan is excluded from the analysis. In so doing, the calculation of property tax revenue in this analysis underestimates growth-related property taxes by up to \$1 million to \$2 million annually under each of the three scenarios.

For the new single family homes, which are assumed to be townhomes, the median sale price of townhomes from between September 2020 and August 2021 multiplied by the number of units under each growth scenario yields the market value of the single family units projected under the plan. With a median sale price of \$500,000, as documented in the Market Study, the market value of the single family units under each scenario ranges from \$232.5 million to \$516.0 million. Combining the assessed value of new residential development and applying the city's property tax rate of \$0.738 per \$100 in assessed value would generate annual property tax revenues of between \$2.2 million and \$5.0 million by 2040, shown in Table 3.

Table 3: Growth-related Annual Property Tax Revenues, 2040

	Scenario 1	Scenario 2	Scenario 3
Property Tax	Pipeline and Infill Capacity	20-Year Trend	Fixed Share of County
Assessed Value of New Residential Development	\$ 302,829,793	\$ 553,136,261	\$ 672,134,418
Assessed Value of New Nonresidential Development	(a)	(a)	(a)
Assessed Value of Total New Development	\$ 302,829,793	\$ 553,136,261	\$ 672,134,418
Property Tax (per \$100 of assessed value)	\$0.7380	\$0.7380	\$0.7380
Annual Property Tax Revenue at Plan Buildout	\$ 2,234,884	\$ 4,082,146	\$ 4,960,352
Assessed Value Assumptions			
Market-Rate Residential			
Total New Residential Units	766	1,399	1,700
For Rent			
Number of New Units	301	550	668
Average Monthly Rent (b)	\$1,700	\$1,700	\$1,700
Vacancy Rate	2%	2%	2%
Average Annual Expense per Unit (c)	\$7,140	\$7,140	\$7,140
NOI (per unit)	\$12,852	\$12,852	\$12,852
Residential Capitalization Rate	5.50%	5.50%	5.50%
Estimated Market Value	\$70,359,793	\$128,516,261	\$156,164,418
For Sale			
New For-Sale Townhomes (d)	465	849	1,032
Sale Price	\$500,000	\$500,000	\$500,000
Estimated Market Value	\$232,470,000	\$424,620,000	\$515,970,000
Total Residential Market Value	\$302,829,793	\$553,136,261	\$672,134,418
Nonresidential (e)			
Retail			
NNN Rent (per sq. ft. per year)	\$30.00	\$30.00	\$30.00
Vacancy Rate	5%	5%	5%
Net Operating Income (NOI) (per sq. ft.)	\$28.50	\$28.50	\$28.50
Net New Retail (SF)	192,699	351,976	427,697
Total NOI	\$5,491,917	\$10,031,306	\$12,189,376
Capitalization Rate (f)	8.00%	8.00%	8.00%
Estimated Market Value	\$68,648,959	\$125,391,323	\$152,367,201
Office			
NNN Rent (per sq. ft. per year)	\$27.00	\$27.00	\$27.00
Vacancy Rate	5%	5%	5%
Net Operating Income (NOI) (per sq. ft.)	\$25.65	\$25.65	\$25.65
Net New Office (SF)	144,509	263,953	320,739
Total NOI	\$3,706,645	\$6,770,403	\$8,226,943
Capitalization Rate (f)	8.00%	8.00%	8.00%
Estimated Market Value	\$46,333,061	\$84,630,035	\$102,836,793
Industrial-Flex			
NNN Rent (per sq. ft. per year)	\$15.00	\$15.00	\$15.00
Vacancy Rate	5%	5%	5%
Net Operating Income (NOI) (per sq. ft.)	\$14.25	\$14.25	\$14.25
Net New Industrial-Flex (SF)	55,473	101,324	123,122
Total NOI	\$790,486	\$1,443,869	\$1,754,494
Capitalization Rate (f)	10.00%	10.00%	10.00%
Estimated Market Value	\$7,904,861	\$14,438,690	\$17,544,936
Total Nonresidential Market Value	\$122,886,881	\$224,460,048	\$272,748,931

Notes:

** The assessed value of nonresidential development is excluded from the estimate of the assessed value of new development. This is because some if not all of the new nonresidential development will replace existing nonresidential development, so the net value of new nonresidential development must take into account the assessed value of existing nonresidential development. However, it is unclear which existing nonresidential development would be replaced, so this analysis makes the conservative assumption to exclude the market value of new nonresidential development in order to avoid overestimating growth-related property tax revenues.

(a) Average asking rents are based on estimates from CoStar for Q2 2021, as presented in the Market Analysis of the Comprehensive Plan Update.

(b) The average annual expense per unit is based on a standard assumption of operating costs for rental units totaling 35 percent of gross rental income.

(c) The median sale price of all units sold in Annapolis between September 2020 and August 2021 is the basis for this estimate, as provided by Redfin and presented in the Market Analysis of the Comprehensive Plan Update.

(d) NNN Rents for all nonresidential land uses are based on Q2 2021 estimates from CoStar, presented in the Market Analysis of the Comprehensive Plan Update.

(e) Market cap rates are based on estimates from CBRE.

Sources: Redfin, 2021; CoStar, 2021; CBRE, 2021; BAE, 2021.

Income Tax

The rent and sale price assumptions for new multifamily and single family units used in the property tax calculations serve as the basis for determining growth-related income tax revenue. As detailed in Table 4, for the multifamily units, monthly rent is assumed to equal 30 percent of a household's gross monthly income. A multifamily unit with \$1,700 monthly rent would therefore require an annual income of \$68,000. This is applied to the number of new multifamily units projected under the three scenarios, generating between \$96,000 and \$213,000 in annual income tax revenue by 2040. The city of Annapolis receives 2.81 percent of Anne Arundel County's 17.0 percent income tax levy.

Similarly, a \$500,000 single family home financed by a 30-year mortgage with a fixed mortgage rate of 2.92 percent and a six percent down payment would require an annual income of \$117,679 if monthly mortgage payments are 20 percent of a household's gross monthly income.⁶ Applying the city's income tax rate to the number of projected single family

⁶ Housing costs are assumed to be 35 percent of a household's gross monthly income, where 20 percent are monthly mortgage payments and the remaining 15 percent account for insurance, property taxes, HOA fees, etc.

homes under each scenario multiplied by an annual household income of \$177,679 yields between \$248,000 and \$551,00 in annual growth-related income tax revenue by 2040.

Table 4: Growth-related Annual Income Tax Revenues, 2040

	Scenario 1	Scenario 2	Scenario 3
	Pipeline and Infill Capacity	20-Year Trend	Fixed Share of County
Income Tax			
Income Tax Revenue from For-Rent Units	\$95,853	\$175,082	\$212,747
Income Tax Revenue from For-Sale Units	\$248,299	\$453,533	\$551,103
New Income Tax Revenue	\$344,152	\$628,614	\$763,850
Anne Arundel County Income Tax Rate	2.81%		
Annapolis Share of County Income Tax	17.00%		
Cost Assumptions			
<u>Multifamily Rentals</u>			
Rent to Income Ratio	30%		
<u>Single Family For Sale</u>			
Down Payment	6.00%		
Interest Rate (Fixed 30-Year)	2.92%		
Loan Term (months)	360		
Mortgage as % of Gross Monthly Income (a)	20%		
Development Assumptions			
For Rent			
Net New Units	301	550	668
Average Monthly Rent	\$1,700	\$1,700	\$1,700
Annual Household Income	\$68,000	\$68,000	\$68,000
Vacancy Rate	2%	2%	2%
Income Tax Revenue	\$95,853	\$175,082	\$212,747
For Sale Townhomes			
Net New Units	465	849	1,032
Sale Price	\$500,000	\$500,000	\$500,000
Loan Amount	\$470,000	\$470,000	\$470,000
Monthly Payment	\$1,961	\$1,961	\$1,961
Annual Income	\$117,679	\$117,679	\$117,679
Vacancy Rate	5%	5%	5%
Income Tax Revenue	\$248,299	\$453,533	\$551,103

Notes:

(a) Based on the assumption that total housing costs total 35 percent of gross monthly income, where the 20 percent is the monthly mortgage payment and the other 15 percent accounts for homeowners insurance, property taxes, HOA fees, etc.

Sources: City of Annapolis, 2021; BAE, 2021.

Other General Fund Revenues

Other General Fund revenues, such as licenses, permits and fines and forfeitures, are projected using the average method. A portion of each source is held fixed, while the variable portion is projected to change with growth. BAE consulted with city staff to determine which revenues were held fixed or variable. As shown in Table 5, only licenses and permits, fines and forfeitures, and charges for service would vary with growth, while Interest and rent,

intergovernmental transfers and other revenues would not be impacted by growth. This is a conservative assumption as certain intergovernmental transfers, which include grants and transfers from state and federal sources, are often tied to a city's size. In total, of the city's \$36.6 million in other revenues budgeted, \$6.8 million is variable with growth. This is an average of \$123 in variable revenues per the existing 2021 service population of 55,236.

Table 5: Growth-Related Annual Impact to Other General Fund Revenues, 2040

Other General Fund Revenues	2021-2022 Revenues	% Variable	Variable Revenues
Licenses and Permits	\$3,071,500	93%	\$2,869,000
Fines and Forfeitures	\$143,000	94%	\$135,000
Interest, Rent, and Other	\$538,000	0%	\$0
Intergovernmental	\$28,803,700	0%	\$0
Charges for Service	\$3,781,000	100%	\$3,781,000
Other Revenues	\$287,000	0%	\$0
Total	\$36,624,200	19%	\$6,785,000
Net Variable Other General Fund Revenues			\$6,785,000
Existing Service Population			55,236
Average Revenue Per Service Population			\$123

Source: BAE, 2021.

Summary of Growth-related Revenues

Table 6 summarizes annual growth-related revenues by 2040. Applying the \$123 average in Other General Fund revenues to the growth in service population under each scenario yields between \$306,000 and \$679,000 annually. Combined with the growth-related property and income tax revenues, as determined based on the development assumptions under each

scenario described in the previous subsections, growth-related revenues total between \$2.9 million and \$6.4 million.

Table 6: Summary of Annual Growth-Related Revenues, 2040

Source of Revenue	per Service Population	Scenario 1 Pipeline and Infill Capacity	Scenario 2 20-Year Trend	Scenario 3 Fixed Share of County
Property Tax	n.a.	\$2,234,884	\$4,082,146	\$4,960,352
Income Tax	n.a.	\$344,152	\$628,614	\$763,850
Other General Funds Revenue:	\$123	\$305,764	\$558,496	\$678,647
Licenses and Permits	\$52	\$129,291	\$236,157	\$286,962
Fines and Forfeitures	\$2	\$6,084	\$11,112	\$13,503
Interest, Rent, and Other	\$0	\$0	\$0	\$0
Intergovernmental	\$0	\$0	\$0	\$0
Charges for Service	\$68	\$170,390	\$311,226	\$378,182
Other Revenues	\$0	\$0	\$0	\$0
Net New Service Population		2,489	4,547	5,525
Total Growth-related Revenues		\$2,884,800	\$5,269,255	\$6,402,849

Source: BAE, 2021.

Growth-Related Expenditures

This section describes the growth-related demand for city services as estimated by the FY22 budget for each city department. For all expenditures other than police costs, variable costs represent the services that will be impacted to accommodate demand from new growth. Variable and fixed costs were established in consultation with city staff. Growth-related police costs are calculated based on a specific level of service standard obtained from the Annapolis Police Department, which include capital costs associated with maintaining that level of service.

Police Expenditures

Discussions with the Annapolis Police Department revealed that new officers are hired based on the growth of the residential population. The Police Department aims to maintain a level of service of 3.2 officers per 1,000 city residents. Notably, the level of service does not account for an increase in new jobs or nonresidential development. Although the Police Department currently maintains a ratio of 3.1 uniformed officers per 1,000 residents (124 officers for 39,982 residents), excluding officers in leadership positions (i.e. Police Captain, Lieutenant, etc.), the ratio of patrol officers per 1,000 residents is just 2.2 (89 patrol officers). Applying the Police Department's desired level of service of 3.2 officers per 1,000 residents to the residential growth projections would generate a need for more patrol officers per 1,000 new residents than the current level of service, generating a relatively high, and therefore conservative estimate of growth-related police costs. Police expenditures typically account for

a large share of growth-related cost impacts, so a conservative approach ensures this analysis does not understate this critical cost component.

New officers are hired with a total compensation of \$95,000 in annual salary and benefits. Each new officer also incurs capital costs in the form of \$10,000 in equipment and a patrol vehicle worth \$50,000. These costs are annualized based on turnover rates of five and seven years, respectively, which accounts for the replacement of equipment and vehicles for each officer on an ongoing basis. In total, each new officer has an annual cost of \$104,143, as shown in Table 7. Applying this cost to the need for new officers based on the residential growth projected under each scenario, generates annual police costs of between \$602,000 and \$1.3 million.

Table 7: Growth-Related Annual Police Expenditures

Level of Service	2021		
Residential Population	39,982		
Officers per 1,000 Residential Population (a)	3.2		
	Scenario 1	Scenario 2	Scenario 3
	Pipeline and	20-Year	Fixed Share
	Infill Capacity	Trend	of County
Additional Staffing Requirements			
Net New Residents	1,808	3,302	4,013
Additional Officers Required	6	11	13
Growth-related Police Costs	\$602,473	\$1,100,452	\$1,337,196
Cost Assumptions			
New Officer Expenditures	One-Time	Replacement	Annual
	Unit Costs	Cycle (Years)	Costs
Police Officer Salary + Benefits	n.a.	n.a.	\$95,000
Equipment for Patrol Officer	\$10,000	5	\$2,000
Patrol Vehicle (1 per Officer)	\$50,000	7	\$7,143
Total			\$104,143

Notes:

(a) Based on discussion with the Police Department, new police officers are hired based on a level of service of 3.2 officer per 1,000 city residents (not service population).

Sources: City of Annapolis, 2020; BAE, 2021.

Other General Fund Expenditures

The growth-related impact on most city services was calculated using the average method, based on consultations with city staff about which costs under each department's budget would vary with growth. As shown in Table 8, of the \$68.8 million General Fund expenditures (not including police costs), \$26.3 million (38 percent) is considered to vary with growth. For some departments, like the City Council and the Office of the Mayor, growth will have no impact on the budget.

The Finance Department does have some variable costs associated with staffing and supplies, but the majority of the Department of Finance's budget is not allocated to services but rather

for pension contributions, interfund transfers and debt service. These costs are not variable with growth, resulting in only 13 percent of the department's \$20.5 million being held variable. Similarly, the Fire Department would not need to hire firefighters as the number of fire stations will remain the same. However, supply and equipment costs are expected to increase with growth, resulting in 11 percent variable costs of the department's \$21.7 million budget.

For some departments, all costs are variable with growth, such as Recreation & Parks, Planning & Zoning, and Public Works. All of these departments have services that are demanded by all residents so as the city grows, so too will demand for these services. For example, although there are no new roads to serve growth planned for in the Comprehensive Plan, new residents and workers will increase wear and tear on roads and other infrastructure maintained by the Department of Public Works. Therefore, the costs for the Public Works level of service provided to the city is also projected to increase proportionally with growth. Increased demand for facilities, services, and staff is accounted for by assuming 100 percent variable growth in these departments.

As summarized in Table 8, the total \$26.3 million in variable expenditures averages to \$476 per member of the service population as of 2021. The largest component of this cost is Public Works expenditures (\$149 per service population), followed by Recreation and Parks costs (\$105).

Table 8: Growth-related Annual Other General Fund Expenditures, FY22

Average Cost Method - General Fund Expenditures	2021-2022 Expenditures	% Variable Expenditures	Total Variable Expenditures
City Council and Office of the Mayor	\$4,386,500	0%	\$0
Human Resources	\$1,016,400	0%	\$0
Management Information Technology	\$2,045,000	100%	\$2,045,000
Finance	\$20,551,700	13%	\$2,751,181
Planning & Zoning	\$4,589,000	100%	\$4,589,000
Office of Environmental Policy	\$0	0%	\$0
Fire Department	\$21,670,700	11%	\$2,402,364
Office of Emergency Management	\$502,800	100%	\$502,800
Public Works	\$8,204,300	100%	\$8,204,300
Recreation & Parks	\$5,800,000	100%	\$5,800,000
Total	\$68,766,400	38%	\$26,294,644
Net Variable General Fund Expenditures			(\$26,294,644)
Existing Service Population			55,236
Average Expenditures Per Service Population			(\$476)

Source: BAE, 2021.

Summary of Growth-related Expenditures

Table 9 summarizes the growth-related demand for city services as estimated through the FY22 budget, discussions with city staff, and assumptions regarding level of service standards from the Police Department. The \$476 in average expenditures per service population for

non-Police costs is applied to the growth projected under each scenario, generating between \$1.2 million and \$2.6 million in annual expenditures in 2040. Combined with the growth-related impact on police costs, the total annual impact on expenditures by 2040 is projected to be between \$1.8 million and \$4.0 million.

Table 9: Summary of Annual Growth-related Expenditures, 2040

		Scenario 1	Scenario 2	Scenario 3
General Fund Expenditures	per Service Population	Pipeline and Infill Capacity	20-Year Trend	Fixed Share of County
Police	n.a.	(\$602,473)	(\$1,100,452)	(\$1,337,196)
Other General Fund Expenditures	(\$476)	(\$1,184,960)	(\$2,164,398)	(\$2,630,033)
City Council and Office of the Mayor	\$0	\$0	\$0	\$0
Human Resources	\$0	\$0	\$0	\$0
Management Information Technology	(\$37)	(\$92,157)	(\$168,331)	(\$204,544)
Finance	(\$50)	(\$123,981)	(\$226,459)	(\$275,178)
Planning & Zoning	(\$83)	(\$206,802)	(\$377,736)	(\$458,999)
Office of Environmental Policy	\$0	\$0	\$0	\$0
Fire Department	(\$43)	(\$108,262)	(\$197,746)	(\$240,288)
Office of Emergency Management	(\$9)	(\$22,659)	(\$41,387)	(\$50,291)
Public Works	(\$149)	(\$369,724)	(\$675,323)	(\$820,607)
Recreation & Parks	(\$105)	(\$261,375)	(\$477,417)	(\$580,125)
Net New Service Population		2,489	4,547	5,525
Total Growth-related Expenditures		(\$1,787,433)	(\$3,264,850)	(\$3,967,229)

Source: BAE, 2021.

Net Fiscal Impact

The net fiscal impact is the growth-related revenues minus the growth-related expenditures. Table 10 shows this net fiscal impact on the annual city budget by 2040 to be \$218,000 under the Pipeline and Infill Capacity Scenario, \$398,500 under the 20-year Trend scenario, and \$484,234 under the Fixed Share of County scenario. This result suggests that the growth under each scenario would generate sufficient revenues to cover the increased demand for services (expenditures) it would generate. This is due to an average surplus of \$87.65 in

revenues over expenditures associated with each member of the service population under all three scenarios.

Table 10: Net Growth-Related Annual Fiscal Impact, 2040

	Scenario 1	Scenario 2	Scenario 3
	Pipeline and Infill Capacity	20-Year Trend	Fixed Share of County
Growth-related Impact			
REVENUES	\$3,190,564	\$5,827,751	\$7,081,496
Property Tax	\$2,234,884	\$4,082,146	\$4,960,352
Income Tax	\$344,152	\$628,614	\$763,850
Other General Funds Revenues	\$305,764	\$558,496	\$678,647
Licenses and Permits	\$129,291	\$236,157	\$286,962
Fines and Forfeitures	\$6,084	\$11,112	\$13,503
Interest, Rent, and Other	\$0	\$0	\$0
Intergovernmental	\$0	\$0	\$0
Charges for Service	\$170,390	\$311,226	\$378,182
Other Revenues	\$0	\$0	\$0
EXPENDITURES	(\$2,972,393)	(\$5,429,248)	(\$6,597,261)
Police	(\$602,473)	(\$1,100,452)	(\$1,337,196)
Other General Fund Expenditures	(\$1,184,960)	(\$2,164,398)	(\$2,630,033)
City Council and Office of the Mayor	\$0	\$0	\$0
Human Resources	\$0	\$0	\$0
Management Information Technology	(\$92,157)	(\$168,331)	(\$204,544)
Finance	(\$123,981)	(\$226,459)	(\$275,178)
Planning & Zoning	(\$206,802)	(\$377,736)	(\$458,999)
Office of Environmental Policy	\$0	\$0	\$0
Fire Department	(\$108,262)	(\$197,746)	(\$240,288)
Office of Emergency Management	(\$22,659)	(\$41,387)	(\$50,291)
Public Works	(\$369,724)	(\$675,323)	(\$820,607)
Recreation & Parks	(\$261,375)	(\$477,417)	(\$580,125)
NET FISCAL IMPACT	\$218,171	\$398,503	\$484,234

Source: BAE, 2021.

The fiscal impact under the Pipeline and Infill Scenario should be considered the baseline fiscal impact, as the \$218,000 net fiscal results is generated by the growth Annapolis would anticipate whether or not the plan is approved. This scenario, as discussed in the Methodology section, assumes that growth by 2040 will only come from units currently in the development pipeline as well as the market absorbing the remaining residential development potential in areas already zoned for residential development. Given the net positive fiscal surplus per new service population, the other two growth scenarios with faster overall growth rates generate an even greater net positive fiscal return. The net positive fiscal result implies that the City will be able to maintain its level of service to residents and workers, as estimated in dollars using FY22 budget appropriations, despite increased demand for City services from

growth under the Annapolis Comprehensive Plan. Any surplus revenues can be used to enhance citywide public service levels at the discretion of the City Council.

This analysis includes two key conservative assumptions. The most significant conservative assumption was excluding the growth-related impact of nonresidential development on property tax revenue. The market value of nonresidential development is actually excluded because new nonresidential development will most likely replace existing nonresidential development as it would occur on infill sites. However, which existing nonresidential development would be replaced by new development is unclear, so the assessed value of existing nonresidential development cannot be subtracted from the assessed value of new development for the net increase in assessed value. Although this analysis cannot derive the net new nonresidential property tax revenue, the gross value of the new development projected in the Plan could increase property tax revenue by up to \$1 million to \$2 million annually under each of the three scenarios. In addition, growth-related police expenditures are based on the Police Department maintaining a level of service higher than level of service it currently provides Annapolis in terms of officers per 1,000 residents, thereby estimating growth-related police costs based on a higher cost per resident than the Department currently spends.